

Appl. No. : 09/921,158
Filed : August 1, 2001

AMENDMENTS TO THE CLAIMS

Please cancel Claims 54, 59 and 66 without prejudice.

Please amend the claims as follows:

1. (Previously Presented) A method for closing a wound in a blood vessel of a patient, comprising:
 - providing a guidewire extending through the wound and out of the patient;
 - providing a catheter adapted to accommodate the guidewire and comprising a lumen, the catheter having at least one hole formed through a side of the catheter, the at least one hole communicating with the lumen;
 - providing a source of suction;
 - placing the lumen into communication with the source of suction;
 - providing a retractor having a plurality of elongate retractor arms;
 - coupling the retractor to the catheter so that a distal end of each retractor arm is positioned proximal of the hole a distance at least the same as a thickness of a wall of the blood vessel;
 - mounting a hemostatic material onto an outer surface of the catheter;
 - threading the catheter over the guidewire;
 - advancing the catheter and retractor over the guidewire until blood is drawn through the at least one hole in the lumen;
 - actuating the retractor to at least partially provide an access path to an outer wall of the blood vessel surrounding the wound;
 - advancing the hemostatic material over the outer surface of the catheter into contact with the outer wall of the blood vessel; and
 - removing the retractor, catheter and guidewire.
2. (Previously Presented) The method of Claim 1, wherein the hemostatic material comprises an absorbent material, and additionally comprising holding the hemostatic material in position until it is anticipated that the hemostatic material has become at least partially soaked with blood.
3. (Original) The method of Claim 1 additionally comprising applying a flowable adhesive to the hemostatic material before the material is advanced into contact with the blood vessel.

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4. (Original) The method of Claim 1 additionally comprising applying adhesive to a portion of the blood vessel adjacent the puncture wound prior to advancing the hemostatic material into contact with the blood vessel.

5. (Previously Presented) The method of Claim 1 additionally comprising applying a flowable adhesive to the hemostatic material after the material has been advanced into contact with the outer wall of the blood vessel.

6. (Original) The method of Claim 1 additionally comprising providing a viewing portion communicating with the lumen and adapted to enable identification of bodily fluids drawn through the lumen.

7. (Original) The method of Claim 6, wherein the catheter is substantially transparent, and the viewing portion comprises the catheter.

8. (Previously Presented) The method of Claim 1 additionally comprising providing a push member having a distal end and being adapted to move longitudinally relative to the outer surface of the catheter, and engaging the hemostatic material with the distal end of the push member and advancing the push member so as to advance the hemostatic material over the catheter and into contact with the outer wall of the blood vessel.

9. (Previously Presented) The method of Claim 8 additionally comprising holding the hemostatic material in position using the push member while removing the catheter from the blood vessel wound.

10. (Previously Presented) A method for closing a blood vessel wound, comprising:
providing a guidewire extending through the wound and out of the patient;
providing an elongate catheter;

advancing the catheter over the guidewire so that a portion of the catheter extends through the wound and a portion extends out of the wound, an outer diameter of the catheter adjacent the wound being greater than an outer diameter of the wound so that the catheter engages edges of the wound so as to substantially plug the wound;

providing a hemostatic material;

positioning the hemostatic material substantially circumferentially around an outer surface of the catheter; and

advancing the hemostatic material distally over the elongate catheter so that the hemostatic material engages an outer wall of the blood vessel adjacent the wound.

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11. (Original) The method of Claim 10 additionally comprising providing an access passage to the wound.

12. (Original) The method of Claim 11, wherein the access passage is provided by a plurality of elongate retractor arms.

13. (Previously Presented) The method of Claim 11 additionally comprising applying suction to clear a field surrounding the wound prior to advancing the hemostatic material.

14. (Previously Presented) The method of Claim 10 additionally comprising removing the catheter from the wound and holding the hemostatic material in place on the wound after the catheter has been removed so that the material becomes at least partially soaked with blood from the wound.

15. (Previously Presented) The method of Claim 10, wherein the catheter comprises a guidewire.

16. Cancelled

17. (Previously Presented) The method of Claim 10, wherein a tip of the catheter is extending through the wound.

18. (Original) The method of Claim 17, wherein the catheter is removed from the wound after the hemostatic material is disposed adjacent the wound.

19. (Original) The method of Claim 10, wherein the hemostatic material comprises a sponge-like material comprising a hemostatic agent.

20. (Previously Presented) The method of Claim 10, wherein the hemostatic material is positioned on the catheter by poking the catheter through the hemostatic material.

21. (Original) The method of Claim 20, wherein the hemostatic material comprises a first layer and a second layer, the first layer being highly elastic, the second layer comprising a hemostasis agent.

22. (Original) The method of Claim 10 additionally comprising applying adhesive to the hemostatic material.

23. (Previously Presented) The method of Claim 10 additionally comprising providing a push member having a distal end and being adapted to slide over the catheter, and engaging the hemostatic material with the distal end and advancing the push member so as to advance the hemostatic material over the catheter.

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24. (Previously Presented) The method of Claim 23, wherein the push member comprises a lumen, and the lumen substantially surrounds the catheter.

25. (Previously Presented) The method of Claim 24 additionally comprising removing the catheter from the wound and push member lumen, and advancing a second hemostatic material through the push member lumen into contact with the first hemostatic material.

26. (Previously Presented) The method of Claim 24 additionally comprising removing the catheter from the wound and push member lumen, and inserting flowable adhesive through the push member lumen into contact with the hemostatic material.

27-45. (Cancelled)

46. (Previously Presented) The method of Claim 1, wherein the hemostatic material comprises a blood clotting agent.

47. (Previously Presented) The method of Claim 46, wherein the hemostatic material does not enter the wound.

48. (Previously Presented) The method of Claim 1 additionally comprising providing a means for locking the hemostatic material in place, and advancing the locking means over the catheter to a point adjacent the hemostatic material.

49. (Previously Presented) The method of Claim 48, wherein the locking means comprises swept-back arms.

50. (Previously Presented) The method of Claim 10, wherein the catheter flexes the edges of the blood vessel wound.

51. (Previously Presented) The method of Claim 10, wherein the hemostatic material comprises a blood clotting agent.

52. (Previously Presented) The method of Claim 51, wherein the hemostatic material is blocked from entering the wound by the catheter.

53. (Currently Amended) A method for closing a blood vessel wound, comprising:
locating the wound;

providing a plurality of elongate retractor arms

providing an access passage to the wound with the plurality of elongate retractor arms;

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positioning a surgical implement so that a portion of the implement extends through the wound and a portion extends out of the wound, and so that the surgical implement substantially plugs the wound;

providing a hemostatic material;

positioning the hemostatic material about an outer surface of the implement;

advancing the hemostatic material distally over the surgical implement so that the hemostatic material engages an outer wall of the blood vessel adjacent the wound; and

applying suction to clear a field surrounding the wound prior to advancing the hemostatic material.

54. Cancelled

55. (Previously Presented) The method of Claim 53, wherein the surgical implement comprises an elongate catheter.

56. (Previously Presented) The method of Claim 53 additionally comprising providing a push member having a distal end and being adapted to slide over the surgical implement, and engaging the hemostatic material with the distal end and advancing the push member so as to advance the hemostatic material over the implement.

57. (Previously Presented) The method of Claim 56, wherein the push member comprises a lumen, and the lumen substantially surrounds the surgical implement.

58. (Currently Amended) A method for closing a blood vessel wound, comprising:

locating the wound;

positioning a surgical implement so that a portion of the implement extends through the wound and a portion extends out of the wound, and so that the surgical implement substantially plugs the wound;

providing a hemostatic material, the hemostatic material comprising a first layer and a second layer, the first layer being highly elastic, the second layer comprising a hemostasis agent;

positioning the hemostatic material about an outer surface of the implement; and

advancing the hemostatic material distally over the surgical implement so that the hemostatic material engages an outer wall of the blood vessel adjacent the wound;

wherein the hemostatic material is positioned on the surgical implement by poking the implement through the hemostatic material.

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59. Cancelled

60. (Currently Amended) The method of Claim 58 additionally ~~A method for closing a blood vessel wound, comprising:~~

~~locating the wound;~~

~~positioning a surgical implement so that a portion of the implement extends through the wound and a portion extends out of the wound, and so that the surgical implement substantially plugs the wound;~~

~~providing a hemostatic material;~~

~~positioning the hemostatic material about an outer surface of the implement;~~

~~advancing the hemostatic material distally over the surgical implement so that the hemostatic material engages an outer wall of the blood vessel adjacent the wound; and~~

~~applying adhesive to the hemostatic material.~~

61. (Previously Presented) The method of Claim 60 additionally comprising applying suction to clear a field surrounding the wound prior to advancing the hemostatic material.

62. (Currently Amended) The method of Claim 58 additionally ~~A method for closing a blood vessel wound, comprising:~~

~~locating the wound;~~

~~positioning a surgical implement so that a portion of the implement extends through the wound and a portion extends out of the wound, and so that the surgical implement substantially plugs the wound;~~

~~providing a push member having a distal end and being adapted to slide over the surgical implement; and~~

~~providing a hemostatic material;~~

~~positioning the hemostatic material about an outer surface of the implement; and~~

~~engaging the hemostatic material with the distal end of the push member and advancing the push member so as to advance the hemostatic material distally over the surgical implement so that the hemostatic material engages an outer wall of the blood vessel adjacent the wound.~~

63. (Previously Presented) The method of Claim 62, wherein the push member comprises a lumen, and the lumen substantially surrounds the surgical implement.

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64. (Previously Presented) The method of Claim 63 additionally comprising removing the surgical implement from the wound and push member lumen, and advancing a second hemostatic material through the push member lumen into contact with the first hemostatic material.

65. (Previously Presented) The method of Claim 63 additionally comprising removing the surgical implement from the wound and push member lumen, and inserting flowable adhesive through the push member lumen into contact with the hemostatic material.

66. Cancelled

67. (Currently Amended) The method of Claim ~~62~~66, additionally comprising applying adhesive to the hemostatic material.

68. (Previously Presented) The method of Claim 62, wherein the hemostatic material is positioned on the surgical implement by poking the implement through the hemostatic material.

69. (Previously Presented) The method of Claim 68, wherein the hemostatic material comprises a first layer and a second layer, the first layer being highly elastic, the second layer comprising a hemostasis agent.

70. (Previously Presented) The method of Claim 62, wherein the hemostatic material comprises a blood clotting agent.

71. (Previously Presented) The method of Claim 70, wherein the hemostatic material is blocked from entering the wound by the surgical implement.